

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 033 - 05709 County Harrison District Union
Quad Big Isaac 7.5' Pad Name Corder East Pad Field/Pool Name ----
Farm name Gerald & Louella Corder Well Number Hildred Unit 2H
Operator (as registered with the OOG) Antero Resources Appalachian Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4341558.461m Easting 538536.975m
Landing Point of Curve Northing --- Easting ---
Bottom Hole Northing 4343399.985m Easting 536391.022m

Elevation (ft) 1405' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

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Date permit issued 1/29/2013 Date drilling commenced 2/21/2014 Date drilling ceased 6/18/2014
Date completion activities began N/A Date completion activities ceased N/A
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 100' Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No
Coal depth(s) ft 333', 625', 930' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
SDW
6/16/2020

WR-35
Rev. 8/23/13

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CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	361'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2537'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16460'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	N/A		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	196 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	N/A	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	N/A	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	---	---	---	---		---	---
Tubing							

Drillers TD (ft) 16800' MD, 7700' TVD (BHL), 7701 (Deepest Point Drilled) Loggers TD (ft) 16800' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 7000'

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Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

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PRODUCING FORMATION(S)	DEPTHS			
	N/A (TOP)	TVD	N/A (TOP)	MD
Marcellus				

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface --- psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas --- mcfpd Oil --- bpd NGL --- bpd Water --- bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	NAME TVD	TVD	MD	MD	
*PLEASE SEE ATTACHED EXHIBIT 3					

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Please insert additional pages as applicable.

Drilling Contractor Scientific Drilling
Address 11220 Northwest 10th Street City Yukon State OK Zip 73099

Logging Company Rush Wellsite Services
Address 1500 E. Dave Ward Drive City Conway State AR Zip 72032

Cementing Company Rush Wellsite Services
Address 1500 E. Dave Ward Drive City Conway State AR Zip 72032

Stimulating Company N/A
Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature  Title Permitting Agent Date 05.20

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Siltstone	0	327	0	327
Shale & Coal	327	367	327	367
Shale & Siltstone	367	407	367	407
Sandstone w/trace Coal	407	427	407	427
Siltstone	427	587	427	587
Sandstone w/trace Coal	587	887	587	887
Siltstone	887	927	887	927
Sandstone	927	1,107	927	1,107
Siltstone & Coal	1,107	1,227	1,107	1,227
Siltstone & Sandstone	1,227	1,247	1,227	1,247
Siltstone & Coal	1,247	1,307	1,247	1,307
Siltstone & Sandstone	1,307	1,347	1,307	1,347
Siltstone w/trace Coal	1,347	1,667	1,347	1,667
Siltstone & Sandstone	1,667	1,747	1,667	1,747
Siltstone w/trace Coal	1,747	1,847	1,747	1,847
Siltstone & Sandstone	1,847	1,887	1,847	1,887
Big Lime	1,887	2,274	1,887	2,278
Gantz Sand	2,287	2,691	2,291	2,699
Fifty Foot Sandstone	2,691	2,820	2,699	2,828
Gordon	2,820	2,905	2,828	2,913
Fifth Sandstone	2,905	3,067	2,913	3,075
Bayard	3,067	3,124	3,075	3,132
Speechley	3,124	3,897	3,132	3,905
Baltown	3,897	4,161	3,905	4,169
Bradford	4,161	4,690	4,169	4,698
Benson	4,690	5,197	4,698	5,205
Alexander	5,197	5,366	5,205	5,374
Elk	5,366	5,520	5,374	5,528
Sycamore	5,520	6,814	5,528	6,822
Middlesex	6,789	7,011	6,797	7,028
Burkett	7,011	7,161	7,078	7,205
Tully	7,161	7,189	7,205	7,241
Marcellus	7,343	N/A	7,511	NA
Onondaga	N/A	NA	N/A	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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